



#5

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: McCracken, et al. ) Serial No.: 10/007,137  
Assignee: Greer Reed Biomedical, LLC ) Examiner: Mohandesi, JM  
Filed: December 3, 2001 ) Group Art Unit: 3728  
Title: Adjustable Arch Support Orthosis ) Docket No.: 26066.02  
Including Variably Tensioned Arch  
Curve And Method Of Utilizing Orthosis

**PRELIMINARY AMENDMENT**

Commissioner For Patents  
Washington, DC 20231

Dear Sir:

Enclosed please find a Preliminary Amendment to accompany the submittal of three sheets of Drawings (enclosed) in dark ink, relating to the above-identified patent application as requested by the Customer Service Center, Initial Patent Examination Division, in a Notice to File Corrected Application Papers, dated March 18, 2002 (copy enclosed). No new matter is submitted.

Please note that the Confirmation No. 3681, attached to the Notice to File Corrected Application Papers, dated March 18, 2002, had an error for the Filing Fee Received. The Filing Fee submitted with the above referenced application was \$452.00, not \$412, as referenced by the Confirmation No. 3681. A copy of the check dated December 3, 2001, for \$452.00, is attached. Correction is requested to confirm that the Filing Fee Received was \$452.00.

In The Specification

Please delete paragraph 0019, page 10, lines 1 - 27, continuing on page 11, 1 - 6, and insert the following replacement paragraph 0019.

[0019] In order to adjust the tension along the arch curve **130**, **130'** and to maintain the angle of declination **142** within a preferred range of angles, a means for tensioning **160**, **170** is releasably attachable between an anterior bracket **172**, and a posterior bracket **178**, connected under each surface of the respective anterior arch slope **134** and the posterior arch slope **138**. The means for tensioning **160**, **170** may include any rotatable **188** or similarly manipulated adjustment means **164**, **170** known to those skilled in the art for adjusting the length between two opposed ends connected to the anterior bracket **172** and the posterior bracket **178**. Examples of one embodiment of the means for tensioning **160** includes an anterior cable or rod **162** and a posterior cable or rod **166** that are generally rigid in a length dimension, but may be somewhat flexible in a lateral direction. A rotatable means **164** for adjusting the length between the anterior and posterior cable ends includes adjusting devices such as a sleeve nut, worm gear, or a small-sized turnbuckle (not shown). When the user manipulates the means for adjusting **164**, either by finger manipulation or by use of a small-sized tool, the anterior cable **162** and posterior cable **166** are retracted in overall length between the cable ends, thereby pulling each respective anterior bracket **172** and posterior bracket **178** toward the means for adjusting **164** with a shortening **152** of the tensioning means **160** (see Fig. 2 and 4a). As tension is placed on each respective anterior bracket **172** and posterior bracket **178** by the shortened tensioning means **160**, the bracket connectors **168**, **168'** draw each respective connected portion of the anterior arch slope **134** and posterior arch slope **138** together, thereby inducing additional tension along the arch curve **130**, forming a more rigid arch curve **130**, and slightly increasing the height of the arch curve **130**, providing firm and generally rigid support of a user's arch. When the means for adjusting is manipulated in a direction to lengthen the tensioning means **160**, the length between the ends of anterior cable or rod **162** and

posterior cable or rod **166** is extended due to the push of anterior end **176** against one portion of  
anterior bracket **172**, and extension of tab **192** against a downwards projection of bracket **172**, forcing  
pivoting at an anterior pivot **184** Posterior cable or rod **166** is extended to push against posterior  
25 bracket **178** by the push of posterior end **182** against one portion of bracket **178**, and extension of tab  
**194** against a downwardly projection of bracket **178**, forcing pivoting at a posterior pivot **186**.

Extension of the ends of anterior cable **162** and posterior cable **166**, with resulting reduction of the  
tension along the arch curve, and a slight decrease in the height of the arch curve to a neutral height,  
while retaining a neutral tension along the arch curve **130**.

Preliminary Amendment

Applicant includes a revised paragraph 0019, to insert the element number **188**, on page 10, line 5, to provide agreement with the informal drawings submitted on December 3, 2001, and to provide agreement with the substitute drawings submitted herewith.

If there are any questions, please contact the attorney of record identified below.

Respectfully submitted,



Jack K. Greer, Jr.

Registration No. 42,605

03-30-2002

Date

Day Tel. 865-584-0105

Jack K. Greer, Jr.

Greer Reed Biomedical LLC

116 Heritage Dr.

Oak Ridge, TN 37830

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: McCracken, et al. ) Serial No.: 10/007,137  
Assignee: Greer Reed Biomedical, LLC ) Examiner: Mohandesi, JM  
Filed: December 3, 2001 ) Group Art Unit: 3728  
Title: Adjustable Arch Support Orthosis ) Docket No.: 26066.02  
Including Variably Tensioned Arch  
Curve And Method Of Utilizing Orthosis

**PRELIMINARY AMENDMENT**  
**Marked-Up Amendment**

**In The Specification**

Please delete paragraph 0019, page 10, lines 1 - 27, continuing on page 11, 1 - 6, and insert the following replacement paragraph 0019.

[0019] In order to adjust the tension along the arch curve **130**, **130'** and to maintain the angle of declination **142** within a preferred range of angles, a means for tensioning **160**, **170** is releasably attachable between an anterior bracket **172**, and a posterior bracket **178**, connected under each surface of the respective anterior arch slope **134** and the posterior arch slope **138**. The means for tensioning **160**, **170** may include any rotatable **188** or similarly manipulated adjustment means **164**, **170** known to those skilled in the art for adjusting the length between two opposed ends connected to the anterior bracket **172** and the posterior bracket **178**. Examples of one embodiment of the means for tensioning **160** includes an anterior cable or rod **162** and a posterior cable or rod **166** that are generally rigid in a length dimension, but may be somewhat flexible in a lateral direction. A rotatable means **164** for adjusting the length between the anterior and posterior cable ends includes adjusting devices such as a sleeve nut, worm gear, or a small-sized turnbuckle (not shown). When the user manipulates the means for adjusting **164**, either by finger manipulation or by use of a small-sized tool, the anterior cable **162** and posterior cable **166** are retracted in overall length between the cable ends, thereby pulling each respective anterior bracket **172** and posterior bracket **178** toward the means for adjusting **164** with a

15 shortening 152 of the tensioning means 160 (see Fig. 2 and 4a). As tension is placed on each respective  
anterior bracket 172 and posterior bracket 178 by the shortened tensioning means 160, the bracket  
connectors 168, 168' draw each respective connected portion of the anterior arch slope 134 and  
posterior arch slope 138 together, thereby inducing additional tension along the arch curve 130, forming  
a more rigid arch curve 130, and slightly increasing the height of the arch curve 130, providing firm and  
20 generally rigid support of a user's arch. When the means for adjusting is manipulated in a direction to  
lengthen the tensioning means 160, the length between the ends of anterior cable or rod 162 and  
posterior cable or rod 166 is extended due to the push of anterior end 176 against one portion of  
anterior bracket 172, and extension of tab 192 against a downwards projection of bracket 172, forcing  
pivoting at an anterior pivot 184. Posterior cable or rod 166 is extended to push against posterior  
25 bracket 178 by the push of posterior end 182 against one portion of bracket 178, and extension of tab  
194 against a downwardly projection of bracket 178, forcing pivoting at a posterior pivot 186.  
Extension of the ends of anterior cable 162 and posterior cable 166, with resulting reduction of the  
tension along the arch curve, and a slight decrease in the height of the arch curve to a neutral height,  
while retaining a neutral tension along the arch curve 130.